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GERMANY.

Notes of Lecture by Maj. Percy Black.

December 6, 1939.

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Col. Rehkopf: For the past three years Major Percy G. Black has been Attache and Assistant Attache at Berlin. He returned last week and this morning comes to give the War College the benefit of his very recent and first-hand information of that absorbing subject. I present to you, Major Black.

General Peyton and Gentlemen:

This morning I am not going to give a continuous lecture, I am simply going to try to touch on some of the high points, particularly of the Polish campaign and of the organization of the German Army and some of the factors which made this campaign one of the most outstanding in history. I am bringing out these points with a view to you asking questions afterwards. There isn't time to cover the whole subject but I want to touch on the high points which perhaps will give a lead to questions. I have one request to make and that is that the questions be confined to military and not to political subjects.

I am going to diverge a little from my program and start in by talking of the morale and conditions in Germany at the moment. I know you will be interested in that and I think that perhaps a false impression has been created in the United States in the press. During the summer months, from May on until the end of August, it was quite apparent to us in Berlin that Germany would attack Poland. The trend

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of German expansion was southeast. In order for Germany to have a free hand in the southeast and in the Balkans, it was necessary that Poland, an armed power on her left flank, capable of combining with Roumania and Yugoslavia and backed by England and France, be removed as she would be a dangerous adversary in such a move.

In March, the Germans took over Bohemia and Moravia. That was a purely strategic move for a double purpose: First, to seize the arsenal from which Germany's potential enemies were receiving their munitions and their arms and that included Poland, Russia, Roumania, Turkey, Bulgaria and Yugoslavia, and second, to place the German Army on the south flank of Poland in order to execute the prearranged plan of campaign. It was also quite evident that after Germany had seized Bohemia and Moravia, the industry, particularly the war industry, of that country which included armament, oil, and rolling stock, would be an asset if used immediately. If Germany waited, they would become a liability due to loss of markets, loss of raw materials for the Bohemian manufacturers.

This general plan was quite evident throughout Germany to the Germans and the political question of Danzig and the Corridor was made a national issue. The curious part, however, was that during all these months the German people and the German Army were absolutely convinced that they would be able to carry out their plan against Poland without a World War. I talked to many officers and many civilians, and all were unanimous in the opinion there would be no World War. When the Russian non-Aggression Pact was pulled out of the hat, at the last minute, I am convinced Hitler believed that would be sufficient to

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prevent England and France entering the war against him. Up until Hitler's speech at the opening of the war, the German people could not believe that they had entered a World War against the Western powers.

I heard Hitler's speech on September 1st. The people in the streets showed absolutely no enthusiasm. Not only that, but they didn't even make any comments on the speech. After the victories in Poland, there was no enthusiasm whatever shown in Berlin, no celebrations of the victories. Officers coming back from the front, on leave, told me that at the front they didn't even know they were at war with England and France. However, having entered that war and regardless of how the people thought of what had brought them into it, they are now firmly united in repelling what they believe to be an attack by England. In fact, the war has brought the German people more closely together than they were before, and the only thing they fear more than anything else is another Treaty of Versailles, and I am convinced that Germany will fight to the last rather than submit to terms which she believes will ruin and crush her.

An interesting feature now of the war is the fact that the administration of Germany has, by a series of decrees which started on the first of September, been placed in the hands of Goering; Hitler has relinquished the reins of government and Goering is the man who is carrying on. Further, there is, among the German people, from top to bottom and among the leaders, a very sincere desire for peace on the west. This desire is augmented by the fear of Russia and any German, when he talks to you confidentially, will tell you their next opponent

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must be Russia. I am convinced that if peace could be established today on the Western Front with France and England, that is, a peace which would not humiliate the German people and one that would be acceptable, Germany would turn against Russia within six months.

I want to take a minute now and talk on the internal conditions in Germany. Take the question of food: before this war began we made a very careful study of food conditions in Germany and as a result of that study we came to the conclusion that there are enough reserve supplies of food to last at least a year and a half without outside resources. With outside resources, from Rumania, Hungary, and Russia, it will be prolonged a good deal further. The greatest shortage, of course, is in fats and animal fodder. By next spring the Germans hope that through the results of the Rumanian treaty and the rotation of crops there that they will be able to overcome the animal fodder question. They have obtained from Poland certain advantages in dairy products and Russia is promising them fats and animal fodder. In oil, I believe Germany can continue the war almost indefinitely. Through the Rumanian treaty there became available to Germany exclusive~~y~~ of foreign-owned oil, about a million tons in Rumania itself. In Czechoslovakia, the Germans took 500 thousand tons of oil. They have been promised a million tons by Russia and in addition have an untapped oil field north of Hanover which they have been keeping in the ground as a reserve. The bottleneck of the fuel question is one of transportation rather than one of raw materials, and the serious question of transporting the oil from Rumania and Russia to Germany may create a shortage within the next year. Still, I believe Germany

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has ample reserves for the present.

We figured in 1938 that for the years of 1937 and 1936, German armament had been manufacturing at a minimum rate of a million projectiles a week, of shells of 75mm caliber and greater. So that now, she has a large reserve of ammunition, but is still dependent to a large extent upon Swedish iron ore for her steel manufacture and that is now being menaced by Russia. There is a shortage in Germany of certain other metals which are necessary for war industry, and what reserves of those are on hand we have not been able to find out. However, I feel that Germany can continue the war for at least a year or a year and a half with what she has in reserve at the moment.

In rubber, Germany is very short. In this new product, Buna, which is taking the place of rubber and is far superior for certain purposes, particularly for tires, they are behind the four-year plan, not because of lack of raw materials but because the conversion of the machinery from making rubber tires to making Buna tires has not been completed. That is all I want to say, for the moment on the internal conditions of Germany.

I want to get on now to some of the outstanding lessons of the Polish Campaign. First, I think it might be of interest to tell you a little of the German mobilization plan and of how we discovered that plan. We discovered the German mobilization plan in September, 1938. The way we did that was by a surreptitious expedition to Silesia, where we saw the First Army assemble for the campaign against Czechoslovakia. Then from visits to other fronts we discovered, when the Germans were assembling in 1938, first that there were only two active

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regiments which we were able to identify in each division; second, we found in those active regiments that they lacked one battalion. That started us thinking. We discovered, back at the Army posts and depots, those missing troops and we discovered the reserves reporting to those depots were ~~not~~ being formed into regiments in which a reserve regiment would have one active and two reserve battalions, and an active regiments would have two active and one reserve battalion.

In making an analysis of the trained personnel of Germany, we then found that Germany could double her active Army by the use of reserves who had had a full two-year military training plus Landwehr veterans of the last war. This year the Germans started calling in reserves for training in May, in increasing numbers. However, there were no reserve divisions formed, as far as I know, during the summer months. There was a great deal of activity of the active units from May on until September. By following these units very closely we discovered that divisions were being sent to the Polish frontier for periods of about two weeks, where they would work on fortifications and that gave us a clue as to where the German divisions would assemble for the attack on Poland. We discovered, however, another curious thing: that divisions would appear twice on the Polish Front in different places. We deduced later, the reason for this was that in one sector the active division would assemble and in the other sector the first reserve, or offspring of this active division.

As August went on it became more and more apparent that Germany was preparing an attack against Poland. On the 20th we were so sure of this that I went to the garrison of the Third Armored Division and was lucky enough to see them in training for duty on the Polish Front.

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From other sources we found that on the 20th the motorized and mechanized troops moved from their garrisons to positions on the frontier. On the 26th, by watching the garrisons, we discovered that mobilization had commenced and throughout Germany the reserves of the First Reserve regiments reported to their garrisons. On the 27th, the active infantry divisions entrained for the Polish frontier and on the 28th the first reserve regiments entrained.

By the 28th, Germany had doubled her active army and had in the field approximately 122 divisions, all of equal combat value. Of these, about 70 were in the eastern theater and about 50 on the western front.

On September 1st, the German armies - or rather we figured that by the end of the 29th and 30th, the German troops would be in position to attack. We calculated that by the movement of the heavy artillery and by the time we knew it would take to emplace those weapons. By the morning of the 30th, the Germans were ready for the attack and on the morning of the 31st they jumped off.

Before I go into the Polish Campaign, I would like to say something of the Polish strategic plan for resistance against Germany. So much has been said in the press of the complete failure of the Poles that I think it would be worthwhile to show that although their plan was not a good one they did have a plan and it might have worked. The Polish general staff, of course, had numerous plans. The one they put into execution for the defense was based on the factor of England and France entering the war and of being able to ~~contain~~ contain a certain number of German troops in the west, and of the Poles then being able to fight a delaying action until winter would set in when

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they would be in position behind the Narew and Vistula where they could hold out.

In furtherance of that plan the Poles organized five army groups. In the Polish Army they didn't use army corps in these army groups which consisted of a number of divisions and separate cavalry brigades. The first of these groups was along the east Prussian frontier, which was also partly fortified from Grodenz to the east and for a 30 kilometer front by Mlawka. These fortifications consisted of a single line of concrete emplacements known as "Bunkers". These emplacements had reinforced concrete, overhead cover of about four feet thick and walls three feet thick and housed two machine guns or a machine gun and a 37mm. These lines, however, had not been completed. They also had a line of these concrete emplacements along the river Warthe. In front of these lines the First Army was assembled on the East Prussian frontier; the next army group was in The Corridor; the third and largest, in the Posen area; the fourth opposite Silesia, and the fifth opposite the Teschen /~~Tschuen~~ area and the Carpathian Mountains.

The plan of the Poles was to resist to the maximum on the frontier, then fall back to a general line with Grodenz on the north, back of the Vistula, back of the Warthe, which had been fortified, to Cracow on the south, which was a fortification. On this line they hoped to delay as long as possible ~~the attack~~ and finally fall back to a line behind the Narew, the Vistula and the San. They hoped they could prolong that delay until winter set in and the Germans would not be able to cross the rivers in front of that final line.

One of the principal faults of the execution of this plan, which

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completely fell to pieces was the fact that the Polish general staff kept in their own hands the centralized control for the execution of those movements to the rear, and expected to control the war from Warsaw. What happened then was that by the second day of the war, Polish communications had been completely disrupted. Further, the Poles had an Army equipped much as the armies were equipped after the World War. They lacked motor transport, tanks, antiaircraft guns and above all they lacked anti-tank defense; they were relying on the railroads for the movement of troops. By the 4th of September the Polish air force had been neutralized. The rolling stock, particularly engines, had been largely destroyed; every telephone and telegraph wire in Poland was down; all the areas in which reserve divisions were to assemble had been bombed; the Polish general staff was completely out of touch with the field armies and each field army was completely out of touch with the others. As a consequence, when they tried to retire the German mechanized divisions, going around their flanks, had been able to get in rear of the Poles, and in conjunction with the air corps, prevented the Poles from taking a delaying position anywhere. Further, with the neutralization of the Poles' air force they had no observation, and in addition, the Polish troops were forced to move at night from cover to cover, whereas the Germans had complete freedom of movement by day or night.

We have in our office in Berlin a map which the German G-2 Section gave us which shows where each Polish division was first encountered and where it was finally captured. This map shows clearly how the isolated Polish armies attempted to follow the general plan, but without knowledge of what was going on on the right or left and without

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communication with their G.P.Q. So much for the Polish plan.

The main point in connection with the German attack that I would like to emphasize is that the overwhelming success of the German Army was not due to the air corps, was not due to the motorized troops alone, but was due to a balanced field army, with balanced organization and balanced equipment, executing a plan under almost perfect leadership. It was the German infantry and the infantry divisions which won this war. The air corps and the mechanized troops received most of the publicity, just as in a football game the backfield men have their names in the headlines in the papers, but the German infantry was the line and it was the German infantry divisions, attacking on a broad front, which rolled up the Poles and herded them into areas where they were surrounded and destroyed.

The first four days of the war saw the complete defeat of the Polish Army. From the 4th to the 8th of September was a period of pursuit; from the 8th to the 14th the Poles were being surrounded in small groups; from the 14th to the 21st there was a systematic destruction of each of these small groups, and from the 21st on to October 15th was a period of mopping up. It is interesting to note the way these German divisions operated. You are all, I suppose, thoroughly familiar with the German plan of operations. The southern army attacking the industrial area of Teschen and from the Carpatho-Ukraine had the double mission of cutting the line of the San and outflanking the final Polish position and of cutting off a possible Polish retreat to Rumania. The Silesian Army making a main effort, struck directly towards Warsaw and the rear area here (pointing to map) in the direction of Brest.

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The 8th Army, on the left of Brauchitsch, had the mission of protecting Brauchitsch left flank from the Polish Army striking in the direction of Warsaw. Those composed the southern group of armies under General Brauchitsch. The northern group had the mission of cutting the Corridor and moving directly south toward Warsaw. This Prussian army attacked Grodenz and had the mission of cutting the Narew and Bug and getting behind the Polish position on the Vistula. In general, when the German attack jumped off the German infantry advanced in very broad zones of operations and in each zone the reinforced infantry regiment with its battalion of artillery was the combat team. In nearly all instances little or no contact was kept within the regiments within the division zone; each regiment was given a zone of action and an objective and they moved straight on to the objective.

Now, I would like to stop a minute and review a little bit this German combat team of the reinforced infantry regiment. After the World War, many officers in Germany believed the infantry division was too unwieldy and too large a tactical unit for open warfare; it was however for the purpose of supply and administration necessary to have a large body of troops organized as a self-sustained unit in the division. But a compromise or solution was made in the German army in what they call the Marche Combat Group, the infantry regiment reinforced by a battalion of artillery. To fully appreciate this Marche Combat Group, I want to review a little the tremendous striking power of this force and also the fact which is important that in the German army the battalion is the administrative unit, and in the battalion you have all the transportation necessary for the supply of ammunition

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and Class I supplies of that battalion. It supplies itself with its own vehicles from the division D.P. rather than having the division supply it.

I will review a little the weapons this unit contains, to show its immense striking power. The Infantry regiment in Germany has a strength of about 3,000 men; they have in the regiment 81 light machine guns, 54 heavy machine guns, 28 light mortars, 24 heavy mortars, 12 37mm anti-tank guns, 6 75mm infantry howitzers, 2 15 cm. howitzers, 12 10.5 centimeter light field howitzers. One of the basic principles of German organization is that each unit shall have all those weapons necessary to accomplish its normal tactical mission. They don't believe in detachment of weapons for a normal mission and make each individual unit self-sustaining. That goes down to the basic squad which contains a light machine gun, a rifle group and a leader. Again, in the German Army the training is based on individual initiative and individual leadership of the smallest units. So that in the basic squad the leader knows his tactics and can handle his firepower and shock which he has there as a small unit of his own. He will be given a mission and a zone of action and the conduct of that little combat group is left to him. That goes right through the platoon, the company, the battalion and is, in a large measure, accountable for the terrific speed with which the Germans can attack, I have personally seen on maneuvers an entire army corps committed to a coordinated attack of a position by telephonic orders and the attack started within four hours of the initial order. It was those German reinforced regiments, moving on broad fronts, which rolled the Polish troops back.

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In addition, however, they had the mechanized and motorized troops. Except for one instance, which occurred in the south, in the industrial area, these units were used exclusively as we think of cavalry being used. There was only one case where the tanks put on a coordinated tank attack. In Brauchitsch's army the mechanized troops were organized into corps, usually consisting of one or two armored divisions and a motorized infantry division. These mechanized corps, after reconnaissances by the air corps, and when the Polish troops had been engaged by the advancing German infantry, moved around the flanks of the Poles and were able to get in rear of the Poles and prevent their taking up delaying positions. It was only through the closest cooperation of the air corps with the ground troops that these daring maneuvers were possible. The air corps made the reconnaissances for the mechanized troops and in addition was used to harass the Polish ground troops whenever they attempted to take a stand or whenever they moved by daylight.

It is interesting, in this connection, to note the percentage of air casualties in this war. They ran about this way: in the ratio of three from the fire of machine guns and rifles, two from antiaircraft fire, to one from aerial combat. I think that conclusively shows the part the air corps played in assisting the advance of the ground forces.

In the north the third armored division succeeded in breaking through and reaching the Vistula before the Polish troops could retire. They were then given the curious mission: after the infantry reached the Vistula - you have here a very large wooded area (pointing to map), and the armored division was given the mission of cleaning up about three Polish divisions, which had still been left in this area. After they

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had broken through the Polish lines, the operations of the mechanized divisions broke down into small units, consisting of what they call a motorized infantry company with a platoon of tanks attached. These small groups were given the mission of cleaning up. In the execution of this mission, as a rule, they took up concealed positions and with the reconnaissance by their motorized units and air corps, they located the Poles and then struck after the Poles had been located.

Another point in connection with motorized and mechanized units which is interesting and brings in the question of motor transport and of the tank vehicles themselves; these tank units operated for 21 days without any time for inspection, overhaul or repair; at the end of that time, I have been told by officers who were with them, that the Buna shoes, the treads of the tanks, were completely worn down. For the supply of those units it is interesting to note that in the tank or armored division - and that applies to all units of the German army - they have sufficient motor transport to make them self-sustaining. Gasoline is carried in drums, a light oval metal drum containing 20 liters; extra drums were placed with the combat vehicles and also in the supply trains. When the drums were emptied they were dropped and picked up later by the trains. A number of instances, and particularly with an armored corps, which I believe consisted of the First and Fifth armored divisions which got to Warsaw on the 9th, and were 50 to 60 kilometers ahead of the infantry and behind the Polish lines, these troops were supplied with both ammunition, fuel and Class I supplies by air. These same 20-liter drums were dropped by airplanes without the use of parachutes Their construction both as to shape and

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the metal of the container was strong enough to permit this and for two or three days those divisions were supplied exclusively by air. Another thing I would like to bring out is, in the German tank unit, in compliance with one of their principles of organization which applies to every unit in the Army, they found that the tank units needed artillery support, that this artillery support could only be given by supporting weapons and for that reason, in the tank battalions, you have a company of medium tanks armed with 75mm guns. In the tank company you have a medium platoon armed with 37mm guns. These medium tanks were another interesting feature.

Another thing, is the armor plate. About two years ago when we began to examine the German tank closely, we discovered that the armor plate of these tanks is welded and not rivetted. Captain Studler, of the Ordnance, had always suspected this welding was a weakness, but the Germans claimed they had a welding system which prevents a weakening around the weld. We found from photographs and from walking with officers of the Polish Campaign that ^{with} the medium tank the Polish 40mm anti-tank gun had ^{not} been able to penetrate the armor when hit directly on the surface, but ~~was~~ were put out of action by penetrations of the corners of the welds.

In the German air force there were two types of planes which were particularly outstanding in Poland; one was the new JU-88 dive bomber and the other was the pursuit plane, the ME-110. The 88 was a new type ship which they had just put into production and which they have very few of at the moment. The new bomber has proved to be the only effective one in their air raids against England. The ME-110, which

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is armed with two cannon and four machine guns, proved to be the most effective machine they have for the attack of ground troops.

Germany has no attack aviation, as we know it. But they use glide attack by single ships in their attacks on ground troops, and this ship with the forward guns and tremendous fire power proved extraordinarily effective.

In the attack on Polish communications in the rear zones, the Germans used their ordinary light bomber. It is interesting to note the method by which they bombed the roads,- they had to use the roads later and didn't want to destroy them; when they were attacking a column on a road they flew in a three-ship formation, the center ship using only machine guns to drive the Polish troops off the road and the two wing ships then bombed them. You could see, throughout Poland, where the lines of bomb holes were on the sides of the roads and nothing touching the road itself. They also destroyed the telephone and telegraph lines in the same manner. It was extremely effective.

Possibly the most outstanding feature of the war in Poland was the work of the German engineers. Poland is cut entirely by rivers, there are many streams in addition to the Vistula, Narew and the Bug. Where the rivers were defended the Poles had erected bridgeheads at the principal roads, consisting of anti-tank defenses, trenches and in many instances of concrete pill boxes. The Germans, in attacking, invariably avoided the bridgeheads and approached the stream between the bridgeheads. In this action, the combat engineer regiment was brought very close to the river bank and what they called "Stormboats" were first launched. These are a light, metal boat, holding about a squad of men

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with an outboard motor to propel it. These boats then rushed across the stream and established on the other side, not a bridgehead but a bridgehead outpost, as they call it. As soon as that bridgehead outpost which consisted largely of machine gun units had been established the remaining infantry troops of the battalion were brought across by rafts made from inflated rubber tubes with wood on top and the equipment of the battalion was brought across with their rifles and a bridgehead established. As soon as they reached the other side the engineers started putting in a light five-ton bridge, which was completed in an average time of about eight hours. The larger part of that time, of course, was consumed in making the approaches.

In the Polish rivers the banks are very high and during this season of the year, with the water of the river very low there was an area of soft mud which had to be crossed before the bridge could be started. The cutting away of the banks for the bridges was the most difficult task. For this purpose the Germans have a steel corduroy, about six feet long and four feet eight inches wide and conical in shape. This was used to corduroy the approaches. As soon as the light bridge was constructed they immediately began the construction of the heavy eight-ton bridge. That usually took about 36 hours to complete. In addition to that, the Army engineers carried with them bridge materiel for spare bridges, which had already been prepared in Germany before the war and for the specific rivers which were to be crossed. This material was rushed up and the highway bridges put across as soon as possible and the work of the railroad engineers commenced as quickly as possible on the railroad bridges. Every railroad bridge in Poland had been destroyed

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by the Poles and thoroughly demolished. It was not until the 18th of September that the Germans were able to get rail communications from the Reich to the front.

In connection with that it is interesting to note that in spite of reports, the German motor transport apparently held up. I have no figures on it, but I do know that during the 21 days in the early part of this campaign the supply was entirely by motor vehicles and at no time, even in the most rapid advance, did the Germans lack ammunition or Class I supplies or fuel. It can only be concluded from that that their ~~their~~ motor transport performed its mission and admirably. Apparently the best type vehicle they had was the light one and a half ton truck. However, they have another type that is worth thinking about and that is the half-track prime mover. They started the development of this about two years ago and it is actually a full track vehicle with wheels in front, with no drive, to prevent side-slipping of the tracked vehicle when towing a heavy load. These are constructed in units of one-ton, five, eight, fourteen and 18-ton. Those are the standard prime movers throughout the German Army and are also used in some of the light divisions as cross-country troop carriers. They proved entirely satisfactory in the campaign in Poland.

An interesting item, however, which I discovered, was that the German motorcycle and sidecar, as a troop carrier, did not prove satisfactory. In the motorized reconnaissance battalion Eight which made the march with the 14th Army to Lemburg and was the first unit to make contact with the Russians, they found this motorcycle, with its three-man load, ammunition and light machine gun, was not a strong enough vehicle

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to withstand the daily combat and the tough going. By the time this battalion reached Lemburg it had no motorcycles left and were mounted in any sort of vehicle they were able to commandeer, largely American cars taken from the Poles. The motorcycle, however, for messenger service was extensively used and did prove satisfactory. Only as a troop carrier was it found too light. In that connection, I don't know whether you know it or not, but in the German mechanized units there is no mechanized unit of the German army that doesn't have as part of it, infantry, either in motorcycles or trucks to furnish support for the mechanized units.

In the reconnaissance battalions they have a motorcycle company and whenever they encounter anti-tank resistance, which the armored cars could not penetrate, these troops were brought up and attacked on foot, supported by their 75mm infantry cannon, which they have with them and their heavy machine guns and mortars.

In the armored division they have a regiment of infantry. Each unit of the mechanized force has its own infantry and its own supporting weapons to support that infantry. An interesting feature is, where the tank units made their rapid advances beyond the Polish lines, ~~we~~ they were able to do that because they had with them the foot troops in motor vehicles, capable of protecting the line of march and seizing positions and holding them.

One other interesting feature was the use of the German cavalry. As you know, the motorized and mechanized units, and the cavalry, are all now under the Inspection of Mobile Troops. In each infantry division that went into Poland they had a cavalry unit attached from the

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corps cavalry. Those regiments consisted of one battalion, or squadron of three troops of horsed cavalry, one battalion of bicycle cavalry and a third, or heavy, battalion of armored cars with the supporting weapons, that is, the anti-tank guns and the infantry howitzers which always accompany each unit in any branch of the service.

In addition, you have a mounted platoon of 29 men and no German troops would ever go into action unless accompanied by their mounted section for immediate reconnaissance in their front. In connection with this it is interesting to ~~xxx~~ note that in the attack on Mlawka the German infantry was held up by the fortified line of coordinated bunkers. They planned their attack from the left flank to take the position in flank. The tanks jumped off and were stopped by tank barriers which they had not seen or reconnoitered, which consisted of deep, wide ditches with poles in the ground, not visible from the air. This tank attack was stopped and had to be postponed. To be sure they would not run into the same thing again, the horse cavalry was called on to reconnoiter ahead of the tanks for obstacles and it was the horse cavalry which, in the next attack, made it possible for the tanks to attack without encountering these obstacles.

I am going to stop now and if there are any questions later, I would like very much to try and answer them.

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Notes of Discussion following lecture
by Major Percy Black, Dec. 6, 1939.
Subject: Germany.

Q. (Maj. Rhodes) I would like to have you comment on the use of radio in the German Army and how effective it was.

A. The radio in the German Army is extensively used in all the small units but for tactical purposes they have a short wave, two-way radio in the battalion and in the company. In the larger units of the German Army for command purposes in this war they didn't use radio except to put out false messages for the consumption of the Poles. An interesting feature is the development of their goniometric system whereby they were able to locate every Polish headquarters as soon as it set up a radio and they told me no division or army headquarters radio lasted thirty minutes before it was bombed. They also used for command and tactical purposes in the small units the infra red ray blinker. They call this the talking light. This instrument has a range of about 8,000 yards and has voice for both sending and reception and is used in the small units. It cannot be intercepted unless you get directly in the beam of the infra red ray and it must be used as you use a light. The type radios the Germans have I know very little about. We only know that they work. We do know the equipment they have, that is, that they do use the two way, short wave radio. In the tank units, the tank leader of each platoon has a two-way radio, the other tanks have only a receiving set. The tank radio is capable of communicating with the air.

Q. (Maj. Rhodes) Did you hear anything about interference by the Poles with the German radio?

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A. No, but the Germans only used their radio on the battlefield, particularly for tactical command purposes. I don't believe they used it even as far back as division. In that connection, it is interesting that the Germans made a very extensive use of the new type airplane for command purposes. It can land on absolutely nothing, could land in this room and take off and has proved most satisfactory for communication between headquarters for the transmission of orders. It was not used for artillery observation.

Q. (Lt. Col. Tindall) I would like to ask you to enlarge a little more on the subject of the German infantry attack on broad fronts. In particular, was the advance made on a broad zone or was the actual attack when they encountered resistance also launched on a broad front?

A. The advance was made on the broad front; when they encountered resistance, it was not. These reinforced regiments were given a zone of action which allowed them complete freedom of maneuver within that zone of action.

Q. (Lt. Col. Tindall) One more question. Did they form any opinion with regard to their ability to break through those bunker lines? I remember seeing in the German communique mention of the fact they had broken through down in the south.

A. I know more about the Mlawa line because I was there and it is interesting. This line consisted only of one line of bunkers, not completed. These bunkers are made with no opening in the front and have their machine gun apertures on the side. Behind the single line, the Poles were at scattered entrenchments with a few infantry and no reserves. When the Germans jumped off on September 1st, they encountered

this line of bunkers, protected in front by wire. They were stopped dead. In attempting to take this line, they tried ~~to locate the~~ artillery fire. The 15 cm. shells had no effect whatever, dented the concrete on the outside but had no effect on the defenders within. They fired 250 kilometer bombs from the air without any effect. The final taking of these bunker lines was accomplished by the use of the 37mm gun with a solid projectile. The greatest effect was obtained by firing at the aperture; although they could not fire into it, the splinter effect of the concrete and of the projectile itself was apparently sufficient to put out the defenders. The Germans have developed a very high technique of attacking these bunker lines. It consists in general of first putting down a smoke screen. Under cover of this smoke screen, special squads cut the wire and work their way as close to the bunker as possible. They then use the 37mm gun and fire into the aperture and under cover of smoke their men approach and climb on top of it. They have flame throwers with which, when they get close enough, they inject flame through the aperture and with sticks of dynamite throw dynamite in from the top. It is a slow way, each bunker must be individually reduced, but it has apparently been effective. It isn't conclusive, however, in the Polish campaign because in no instance were the Polish bunkers completed. There was only one line, without reserves, and they had no mobile reserves behind the lines of attack.

Q. (Capt. Foy, USN.) Did I understand you to say that the Germans had a system of transmitting voice by infra-red ray?

A. Yes.

Q. (Capt. Foy, USN.) How does it work.

A. A. They have tubes for the amplification. We have the complete drawings and plans for that in G-2.

Q. (Capt. Foy, USN) We have had it in the Navy for a long time, what we call a "barking" searchlight, apparently similar to what you refer to as the "talking" searchlight. In it the impulses are sent out by infra-red rays. We never transmitted voice that way, just dots and dashes and code.

A. G-2 has the complete plans and specifications which are available.

Q. (Lt. Col. Barker) I have two questions. First, can you explain the artillery-infantry liaison method which is used in infantry regiments and battalions. Second, can you comment on the German system of providing ^{concentrations} ~~of~~ supporting fires for, say, a semi-deliberate attack?

A. In this question of liaison, the Germans have come to the conclusion that close liaison between infantry and artillery, which would be close enough to take care of targets of opportunity in a modern attack, is impossible. They claim when the infantry jumps off, one unit will advance faster than another and that at no time will the infantry be absolutely sure of their position, that is, for advance. They will overlook machine guns or will be overlooked by artillery fire which will appear on their flanks and for that reason they have given the infantry itself accompanying weapons of sufficient power to take care of those immediate targets which appear on its front. Those are the 75mm infantry howitzer, the 81mm. mortar and the 51mm. mortar. By doing that and also by furnishing the infantry with their own anti-tank

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protection in the form of a company of 12 anti-tank guns, they have released the artillery for the real artillery mission, which is the concentration of artillery fire in front of the main effort. The German artillery is relieved from fire against targets of opportunity, small ones, it is relieved from anti-tank defense and concentrates its efforts in front of the main effort. Specifically, for liaison purposes in the German Army artillery-infantry liaison is a dual responsibility of the infantry and artillery. The artillery has a liaison officer who goes from the battalion to the infantry regimental headquarters. He has only one assistant and is accompanied usually by a light radio, pack set. He is responsible only for information, he doesn't conduct fire, he doesn't seek targets. He simply transmits the needs of the infantry back to the artillery. Further, the artillery also sends forward advance observation parties with light radio equipment for forward observation. It is the duty of the infantry to establish and maintain communications with each artillery observation post. As I say, the liaison is as much the duty of the infantry as it is of the artillery. In addition to all of that, another factor which makes the working of the liaison almost perfect is the organization of the signal troops of the German Army. The communications units belong to their own branch of the service and are an organic part of those organizations. However, under their system each signal unit, whether it is infantry, cavalry, artillery, or signal corps, is formed into small groups, a light telephone group, a medium telephone group and a light radio group. Each of these is similarly trained and equipped, training regulations and equipment being the function of the General

Staff. If an artilleryman needs an extra light radio group, he asks the infantry, "Can you give me one?" He knows what he is getting, knows his equipment, knows his training. Similarly the infantry can call on the artillery for help in one of these specific groups and know what they are getting and how then can be used. The cooperation between the infantry and artillery is almost perfect. But they don't try to use their artillery for fire on isolated targets of opportunity, they don't try to attempt the liaison, as we consider it in the front lines. The infantry has its own weapons to take care of that and the artillery is free to concentrate its fire in front of the main effort. As to supporting fire for an attack, the Germans first fire almost exclusively by battalions. Their methods of fire direction are practically the same as ours except they have more refined means of aiding the battalion commander in fire direction. In building up fires for an attack, first being freed from the worry of targets of opportunity, they prepare concentrations in the same manner that we do in front of the main effort and on localities where they suspect the enemy will be. In firing these concentrations they fire them exactly as we do, successive concentrations. They don't use the barrage and actually the German artillery methods of fire and preparation for fire for support of an attack is exactly as we have it at our field artillery school.

Q. (Maj. Banfill) You have indicated you had considerable freedom of action in gathering information during the mobilization period. Would you care to comment on the amount of direct observation afforded during the operations in Poland? How much were you allowed to see personally?

A. We were given one conducted trip to the front, taken up to

Modlin and Warsaw with the Second Army Corps and were with the 228th Division which was attacking the fortress of Modlin. We saw considerable on that trip. How we gathered the rest of our information, I would rather not say. Sometimes it was a little shady, but we saw, I think, a lot more than we were allowed to see and it was a question principally of knowing what you saw. In the first place, we knew the German Army so well that any unit we could spot, we knew its station list, the type of men and where they came from and if you saw a unit on the road you had a pretty good idea where it came from and where it was going. We had been following this since March with extensive reconnaissance by automobile, train and airplane all over Germany and kept track of it continuously, so that the gradual building up of the German order of battle was not as difficult as it might seem.

Q. (Lt. Col. Ryan) I was interested in your statement about the bombing of C.P.'s within thirty minutes. It seems a little fast to me. I was interested in the method whereby after the location of these C.P.'s by radio they were bombed in 30 minutes. Another question is the training and efficiency of the pilots, bombadeers, etc., of Germany - in the pilot training, in the ability to use the equipment they now have and whether they have sufficient number of pilots to use the equipment, and in the training of the bombadeers if you can give some light on the fact that Germany seems to have gone almost exclusively to dive bombing and why?

A. The first question of the bombing of the Polish headquarters, 30 minutes is a rather broad statement and probably is a little too hasty in time. However, the fact is that the Polish headquarters were put out of action so they could not function and one of the main reasons

for that is the German air corps signal troops did a magnificent piece of work; these signal troops followed right up behind the Army and established the air corps net at once. That air corps net, of course, tied in the Army Headquarters, the ^{hms} ~~gym~~ metric system, the antiaircraft and the headquarters of the air units with their fields. Also, remember, when the Polish air force was put out the Germans were able to bring landing fields within 25 or 30 kilometers of the front, they were able to utilize almost any field suitable for landing, were able to place their ships on the line without camouflage, were able to stay there warmed up and ready to take off without any hindrance from the Polish air corps, and with the excellent communications net which they had I think that probably accounts for it. As to the question about pilots, there is a shortage of trained pilots in Germany. The fellow who flew me up to the front, over The Corridor, and Gdynia, I thought should not have been allowed out without his mother; he looked like an absolute baby. But an interesting fact in the Polish Campaign is that they employ for the most part their younger and ~~in~~ inexperienced pilots and didn't send out their good pilots at all except in command positions, they kept them back in the home fields in Germany for use on the Western Front. The training of the pilots, I cannot answer. The bombing apparently was not all that could have been expected, it was not too good. As a matter of fact, Vanaman's comments on seeing the pictures and results of the bombing was that it was pretty rotten. As to why they use dive bombing methods, I am not technician enough to know. I do know the Germans carry their bombs vertical in their ships.

Q. (Lt.Col. Ryan) Have you any information as to the proportion of

the air corps or service that was used in direct support of ground troops as against that proportion used for missions out of direct contact?

A. I have no figures on that.

Q. (Capt. Sherman) Would you care to comment on the failure of the Germans to as yet make what might be considered a major effort, particularly with regard to the area on the west?

A. In the first place, take the ground because it would have been impossible for the German Army to make a major effort on the west until the motorized and mechanized troops had been completely overhauled after the Polish Campaign. Those units were released about the 21st of Sept. and the overhaul was not completed until about the 4th of November and by that time winter conditions had set in and an offensive would be too late. Further, I think the Germans have no idea of ever attacking the Maginot Line or of being willing to sacrifice the men that would be necessary for a breakthrough. As to the air, the German raids on England so far have been largely reconnaissance and experiments. From the raids they have learned that the only effective ship they have been able to use against the British has been the new JU-88. They haven't enough for a mass attack. They haven't had enough pursuit as yet to accompany the bombers. The new ME-110 they are building as fast as they can, but it is perfectly apparent they haven't had sufficient air strength in effective bombardment that could make an adequate attack against England in force. Then too, after the Polish campaign, the Germans were definitely eager for peace and hoped, I believe, up until the first of November that they could obtain peace and did not want to do anything to jeopardize their chances of obtaining it. When that hope diminished, the weather over England and the North Sea became most uncertain and

it would require at least five clear days of weather to do any effective bombing against the British. I believe that also was another factor that kept them back.

Q. (Capt. Sherman) Then the four Air Fleets the Germans are supposed to have are not of the proper composition to accomplish the mission they say is ~~theirs~~ theirs with regard to England?

A. No. They haven't the equipment yet. The JU-88 is the only ship that has been found effective for that long range bombing against the British and they haven't enough of them.

Gen. Peyton: On behalf of all of us, I want to thank you.

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